

IN THE CLAIMS

1. (currently amended) A ~~manufacturing method of a metallic film to for~~
manufacturing a planar lightwave circuit having a metallic film, comprising the steps
of:

preparing a mask having a hole ~~approximately~~ formed in ~~approximately~~ the
same shape as the metallic film ~~manufactured on at least one of front and rear faces of~~
~~the planar lightwave circuit~~;

arranging said mask such that the hole of the mask corresponds to a
manufacturing portion ~~of said metallic film~~ on said planar lightwave circuit, where
said metallic film is to be formed ; and

manufacturing the metallic film in the manufacturing portion ~~of said metallic~~
~~film~~ on at least one of front or rear faces of the planar lightwave circuit through the
hole of the mask.

2.(currently amended) A ~~manufacturing method of the metallic film to for~~
manufacturing the planar lightwave circuit according to claim 1, wherein the metallic
film is manufactured after performing an annealing process of the planar lightwave
circuit .

3.(currently amended) A planar lightwave circuit having a metallic film and
~~the a~~ waveguide construction of an arrayed waveguide grating, and this waveguide
construction comprising:

one or more optical input waveguides arranged side by side;

a first slab waveguide connected to ~~the an~~ exit end of said optical input
waveguides;

an arrayed waveguide connected to ~~the an~~ exit end of said first slab
waveguide, and ~~consisting of~~ having a plurality of channel waveguides arranged side

by side for transmitting light that has traveled through said first slab waveguide, said channel waveguides having different lengths with the difference preset;

a second slab waveguide connected to ~~the~~ an exit end of the arrayed waveguide; and

a plurality of optical output waveguides arranged side by side and connected to ~~the~~ an exit end of said second slab waveguide;

wherein a at least one of said first and second slab waveguide is divided into two by intersecting planes that intersect ~~the~~ a route of the light traveling along the slab waveguide;

~~The~~ the intersecting planes serve as dividing planes and divide a waveguide forming region into a first waveguide forming region that includes one portion of the divided slab waveguide and a second waveguide forming ~~region~~ region that includes the other portion of the divided slab waveguide. ~~One, one of~~ or both of the first waveguide forming region and the second waveguide forming region are moved along the dividing planes by a position shifting member;

an end portion side of the position shifting member is fixed to at least the one of the first waveguide forming region and the second waveguide forming region through the metallic film; and

the metallic film is manufactured by a manufacturing method ~~of the metallic film mentioned above~~ comprising the steps of:

preparing a mask having a hole formed in approximately the same shape as the metallic film to be manufactured on at least one of front and rear faces of the planar lightwave circuit;

arranging said mask such that the hole of the mask corresponds to a manufacturing portion on said planar lightwave circuit, where said metallic film is to be formed ; and

manufacturing the metallic film in the manufacturing portion through the hole of the mask.

4.(currently amended) A planar lightwave circuit having a metallic film and ~~the~~ a waveguide construction of an arrayed waveguide grating, and this waveguide construction comprising:

one or more optical input waveguides arranged side by side;

a first slab waveguide connected to ~~the~~ an exit end of the optical input waveguide;

an arrayed waveguide connected to ~~the~~ an exit end of said first slab waveguide;

a second slab waveguide connected to ~~the~~ an exit end of said arrayed waveguide; and

a plurality of optical output waveguides arranged side by side and connected to ~~the~~ an exit end of said second slab waveguide;

wherein at least one of said first and second slab waveguides is divided into two by intersecting planes that intersect ~~the~~ a route of the light traveling along the slab waveguide;

an end portion side of ~~the~~ a position shifting member is fixed to at least ~~the~~ one of the first waveguide forming region and the second waveguide forming region through the metallic film; and

said metallic film is manufactured by the method of ~~claim 2~~ comprising the steps of:

preparing a mask having a hole formed in approximately the same shape as the metallic film to be manufactured on at least one of front and rear faces of the planar lightwave circuit;

arranging said mask such that the hole of the mask corresponds to a manufacturing portion on said planar lightwave circuit, where said metallic film is to be formed; and

manufacturing the metallic film in the manufacturing portion through the hole of the mask

wherein the metallic film is manufactured after annealing process of the planar lightwave circuit is performed.